

Minutes of X3T11 HIPPI SWG, and HNF - Technical Committee (TC)
February 4, 1997
San Jose, California

1. Opening remarks and introductions

The Chairman, Don Tolmie of Los Alamos National Laboratory, opened the Technical Committee portion of the HNF meeting and thanked Bob Snively and Sun for hosting this meeting. This group is constituted as both the HIPPI special working group (SWG) under X3T11, and the HIPPI Networking Forum (HNF) - Technical Committee (TC).

Don lead a round of introductions. The list of attendees, including the HIPPI-6400 meeting attendees, is at the end of these minutes.

2. Review / modify the draft agenda

Draft agendas were distributed via e-mail before the meeting for both the HIPPI-6400 specific portion, and the HIPPI general portion. Hard copies were distributed at the meeting. No changes were suggested. These minutes reflect the approved agenda. Don Tolmie agreed to take the meeting minutes. Note that the minutes for the HIPPI-6400 specific meeting are separate.

3. Review Minutes of Previous Meeting

The minutes of the X3T11 HIPPI SWG / HNF - TC meeting of December 3, 1996, in Minneapolis were reviewed. Greg Chesson of SGI moved, and Francois Gaullier of HP seconded, to approve the minutes as written. Passed unanimously.

4. Review of old action items

The action items from the December, 1996, meeting were reviewed for the current status.

1. Michael McGowen of Essential Communications - Generate a HIPPI switch MIB. (In process)
2. Jeff Young of Cray Research - Check on the status of the HIPPI end-point MIB, and if Mark Kelley is going to continue work on it. (Carryover)

3. Michael McGowen of Essential Communications - Update HIPPI-AC to work with HIPPI-SC and its recent changes. (Carryover)
4. Don Tolmie of Los Alamos - Revise HIPPI-FP with the inclusion of a ULP-id for HIPPI-MP. (Carryover)
5. Everyone - Suggest changes to HIPPI-FP and bring in proposals for them. (Carryover)
6. Everyone - Review the HIPPI-6400 MIB. (Carryover)
7. Don Tolmie of Los Alamos - Shepherd HIPPI-Serial Rev 2.7 through X3T11 and the final ANSI approval process. (In process)
8. Don Tolmie of Los Alamos - Shepherd HIPPI-SC Revised, Rev 3.2 through X3T11 and the final ANSI approval process. (In process)
9. Don Tolmie of Los Alamos - Shepherd HIPPI-ATM Rev 1.8 through X3T11 and the final ANSI approval process. (In process)
10. John Renwick of Ascend - Check the status of the updated RFC 1374, IP over HIPPI. (Done)
11. Roger Ronald of Raytheon E-Systems - Make his HIPPI-800 / HIPPI-6400 mapping available for review. It may be the basis, or obviate the need, for HIPPI-MP (Multiple Path). (Done)
12. Don Tolmie of Los Alamos - Present the Project Proposal for HIPPI-ST to X3T11 for further processing. (Done)

5. HIPPI-Serial

Nothing new to report. HIPPI-Serial Rev 2.6 is in the last stages of approval at X3, BSR, and ANSI. The standards document, when it is approved, should be numbered ANSI X3.300-1996. Final approval is expected by April.

6. IETF related items

6.1 IP over HIPPI, RFC 1374

John Renwick of Ascend reported via e-mail that "IP over HIPPI" has been assigned RFC 2067, obsoleting RFC 1374. John is the contact, at jkr@netstar.com.

The document is available from the IETF at URL:
<ftp://ds.internic.net/rfc/rfc2067.txt>.

6.2 ARP over HIPPI

Fred Templin of NASA Ames previously made a proposal as part of HIPPI-6400 SC addressing this subject. He suggested at this meeting that end devices use address x'FE0' to send to a broadcast server, and that the broadcast server use address x'FFF' when sending the multiple copies to the end devices. Fred also reported that he was working with Bob Snively of Sun Microsystems on a HIPPI ULA use 'tutorial' (the IEEE equivalent of an RFC).

6.3 HIPPI end-point MIB

Mark Kelley of Cray Research was implementing a MIB, but was not done as of the February '96 meeting. Jeff Young has an action item to see if Mark Kelley was going to continue, and the status of the document. Nothing new was reported at this meeting.

6.4 HIPPI switch MIB

Michael McGowen reported that Essential Communications is in the process of producing a switch MIB, and would share the results when it was more complete.

6.5 HIPPI-6400 MIB

Von Welch has updated his "HIPPI 6400 End Point MIB" to rev 0.3, based on HIPPI-6400-PH 0.9. The document is available through the HIPPI web page, or from
ftp://ftp.ncsa.uiuc.edu/netdev/hippi6400/hippi6400_mib_v03.pdf. Von asked that everyone review the latest draft and provide comments to him. E-Systems noted that they are basing their HIPPI-6400 switch MIB on Von Welch's end point MIB. Michael McGowen expressed interest in unifying the format and parameters between all HIPPI related MIBs.

Michael McGowen took an action item to try to coordinate the MIB developers.

7. HIPPI-AC (Auto Configuration)

There continues to be interest in pushing this topic, as an ANSI standard or as an HNF document, but nothing new was reported at this meeting. Michael

McGowen has an action item to update the current document.

8. HIPPI-SC (HIPPI-800 Switch Control)

Nothing new to report. HIPPI-SC Rev 3.1 is in the last stages of approval at X3, BSR, and ANSI. The standards document, when it is approved, should be numbered ANSI X3.222-1996. Final approval is expected by April.

9. HIPPI API (Application Programming Interface)

Francois Gaullier of HP reported that liaison has been initiated with X-Open. One HP engineer is working on an API, and Francois is looking for someone from SGI to work with him to produce a draft. Something should be ready for presentation at the April HIPPI meeting. Francois reported that the emphasis is for HIPPI-800 and HIPPI-Serial implementations, with the intent to explore extensions to HIPPI-6400. All there is now is a character driver from SGI; what is being worked on is a low-level Unix API.

10. HIPPI-ATM (Mapping to Asynchronous Transfer Mode)

Nothing new to report. HIPPI-ATM Rev 1.7 is in the last stages of approval at X3, BSR, and ANSI. The standards document, when it is approved, should be numbered ANSI X3.299-1996. Final approval is expected by April.

11. HIPPI-MP (Multiple Path)

HIPPI-MP, which stands for "Multiple Path", is intended to provide higher speed transfers by striping, using current HIPPI interfaces and switches. Don Tolmie, the document editor, reported that he is holding off on updating the original draft so that it may be aligned with the verbiage and techniques used for HIPPI-6400-PH Scheduled Transfers. Based on the proposal from Craig Davidson of Raytheon E-Systems for a mapping between HIPPI-6400 and HIPPI-800, the MP document may no longer be needed.

12. HIPPI-FP (Framing Protocol)

12.1 Suggested changes for revisions

With work on HIPPI-6400 proceeding, a ULP-id for mapping between HIPPI-6400 and HIPPI-800 is needed in -FP. At the 1996 April meeting, a vote to 'revise' HIPPI-FP passed, and a call for other changes was issued. No other changes have been proposed.

12.2 Plans for revision

The Project Proposal for a revision of HIPPI-FP was forwarded to X3T11 at the October meeting. At their December meeting, X3T11 voted to forward it to OMC and X3 for final approval, and it should be expected soon.

13. HIPPI-PH Reaffirmation

Don Tolmie reported reaffirmation, without change, of HIPPI-PH has passed, so this standard is good for another five years. The full designation for this standard now is: ANSI X3.183-1991[R-1996], High-Performance Parallel Interface - Mechanical, Electrical, and Signalling Protocol Specification (HIPPI-PH).

14. HIPPI-6400

14.1 Interim Working Group report

Special HIPPI-6400 working meetings were held January 7-9, in Phoenix, AZ, and February 3-5, in San Jose at the same location as this meeting. Work on HIPPI-6400-PH, HIPPI-6400-SC, and HIPPI-ST progresses. It has been decided to split the optical physical media dependent specifications from HIPPI-6400-PH and make them a separate document. A Project Proposal will be generated for review at the interim HIPPI meeting, and a vote at the April Technical Committee meeting. The MTP connector, using the MT ferrule, was selected as the optical connector. See the separate HIPPI-6400 minutes for these meetings for further details.

14.2 Status of Patents

Hewlett-Packard previously supplied a letter defining HP's release of the 4b/5b coding for use in HIPPI-6400, and has been asked to complete the

ANSI patent release form. HP is also working on a release for the HIPPI-ST concepts. Francois Gaullier reported that the tasks are in the HP lawyers' hands.

14.3 Berg connector patents

Don Tolmie reported that he has received the signed ANSI Patent Form from Berg for the copper connector selected for HIPPI-6400-PH. Don has an action item to forward the form to ANSI.

14.4 Project Proposal for HIPPI-ST

The HIPPI-ST Project Proposal was approved by the HIPPI group at the December meeting, and forwarded to X3T11. An X3T11 vote to forward to OMC and X3 is scheduled for the X3T11 meeting the day following this meeting. (X3T11 forwarded the Project Proposal at their plenary meeting.)

15. Other items

15.1 X3T11 reorganization proposal

A proposal to reorganize X3T11 was discussed. The impact on the HIPPI group would be to become a separate Task Group, e.g., X3T11.1. Memberships, dues, mailings, and officers would also be impacts. X3T11 is scheduled to discuss the reorganization at their Plenary meeting the following day.

16. Future meeting schedule

16.1 March 4-6, 1997, San Jose, CA

This interim meeting will cover HIPPI-6400 issues, with **emphasis on copper starting at 1 PM on Wednesday.**

Tuesday, March 4 — 1 PM - 9 PM
Wednesday, March 5 — 8 AM - 9 PM
Thursday, March 6 — 8 AM - 5 PM

Note that an extra day has been added.

The location is in the Courtyard by Marriott, at the San Jose Airport. Barbara Weber and Berg are the host. (See the meeting announcement on the web page at <http://www.cic-5.lanl.gov/~det/> for further details.)

16.2 April 7-8, 1997, Palm Springs, CA

During the X3T11 April plenary week, the following HIPPI meetings are scheduled:

Monday, April 7-

1 PM - 9 PM — HIPPI-6400

Tuesday, April 8 -

8 AM - 2 PM — HIPPI-TC General and -6400

2 PM - 5 PM — HIPPI-6400 Optical

6 PM - 9 PM — HIPPI-6400 General

The location is the Hyatt Regency Suites in Palm Springs, CA. Jeff Stai and Brocade are the host. (See the meeting announcement on the web page at <http://www.cic-5.lanl.gov/~det/> for further details.)

16.3 Future meeting dates and locations

The following 1997 X3T11 plenary week dates are shown below. Recent changes to this list are underlined to make them easier to find.

1997 -

Mar 5-6	Interim	San Jose, CA	Berg
Apr 7-8	Plenary	Palm Springs, CA	Brocade
May 14-15	Interim	Mt. View	SGI
Jun 9-10	Plenary	Seattle, WA	Boeing
July 9-10	Interim	Minneapolis, MN	Cray
Aug 4-5	Plenary	Honolulu, HI	Hitachi
<u>Sep 9-11</u>	<u>Tentative</u>	<u>Albuquerque, NM</u>	<u>Los Alamos</u>
Oct 6-7	Plenary	Tucson, AZ	FSI
<u>Nov 4-6</u>	<u>Tentative</u>	<u>Dallas, TX</u>	<u>E-Systems</u>
Dec 8-9	Plenary	Orlando, FL	DPT

If interim September and November meetings are needed, Los Alamos and E-Systems have agreed to host in Albuquerque and Dallas respectively.

The 1998 schedule is less firm, but here is what is currently being considered by X3T11 for the plenary meetings. Question marks note the ones that are open. Hopefully HIPPI-6400 will be far enough along that we will not need interim working meetings.

1998 -

Feb 9-10	Plenary	San Diego	Qlogic
Apr 20-21	Plenary	Palm Springs, CA	Brocade
Jun 8-9	Plenary	St. Petersburg	AMP
		Beach, FL	
Aug 10-11	Plenary	??	??
Oct 5-6	Plenary	<u>Ft. Lauderdale, FL</u>	<u>Adaptec</u>
Dec 7-8	Plenary	<u>??</u>	<u>??</u>

17. Review action items

1. Michael McGowen - Generate a HIPPI switch MIB.
2. Michael McGowen to send Essential's HIPPI switch MIB to Don Tolmie for posting on the HIPPI web page.
3. Jeff Young - Check on the status of the HIPPI end-point MIB, and if Mark Kelley is going to continue work on it.
4. Michael McGowen to coordinate the HIPPI MIB developers.
5. Everyone - Review the HIPPI-6400 MIB.
6. Michael McGowen - Update HIPPI-AC to work with HIPPI-SC and its recent changes.
7. Don Tolmie - Revise HIPPI-FP with the inclusion of a ULP-id for HIPPI-MP.
8. Everyone - Suggest changes to HIPPI-FP and bring in proposals for them.
9. Don Tolmie - Shepherd HIPPI-Serial Rev 2.7, HIPPI-SC Revised Rev 3.2, and HIPPI-ATM Rev 1.8, through X3T11 and the final ANSI approval process.
10. Don Tolmie - Correct the errors in the December minutes and replace the copy on the web.

18. Continue work on HIPPI-6400

We were able to finish the main agenda at 9:30 AM, so continued on HIPPI-6400 items until 12:30 AM. See the HIPPI-6400 minutes for details. A HIPPI-6400 meeting addressing fiber media followed from 2 PM - 5 PM, and HIPPI-6400 discussions followed until about 6:30 PM.

Notes from X3T11 Plenary following the HNF-TC

The X3T11 Plenary met the next day, i.e., February 5. HIPPI related items are reported here for your convenience, the definitive record is the X3T11 minutes.

The Project Proposal for HIPPI-ST, as written, was approved by a vote of 60 For, 0 Opposed, and 20 not voting. It will be forwarded to OMC and X3 for further processing.

For HIPPI documents in ISO processing, X3T11 voted to recommend to the JTC1 TAG that the US position on the CD letter ballots for HIPPI-ATM and HIPPI-Serial be approval. Similar actions were taken for an IPI-3 and some Fibre Channel documents.

Discussed reorganization of Technical Committee X3T11, with several Task Groups underneath. (The original plan was distributed over the HIPPI e-mail reflector.) For example, the HIPPI group would

become X3T11.1, and the FC-0 group would be X3T11.2. One consequence would be that the HIPPI plenary would become more formal, and membership (with a membership fee) would be required for voting. Closure was not reached in X3T11, and the number of Fibre Channel groups was still open. Roger Cummings, the X3T11 Chairman, plans to hold an X3T11 Letter Ballot on the reorganization proposal. Once X3T11 approves it, it will need to be approved by OMC and X3 before taking effect.

Attendance (HIPPI-TC, HIPPI-6400, and HIPPI Optical. Only a fraction of these people participated in the HIPPI-TC meeting, but everyone is reported here since we kept a common attendance list.)

Jeff Conley	3M.....	512-984-6989	jconley1@mmm.com
Michael Griffin	3M.....	612-733-6004	megriffin@msmail.mmmg.com
Earl Hayes	Alcoa-Fujikura Ltd.	864-433-5412	
Ron Klechowski.....	Alcoa-Fujikura Ltd.	803-433-5332	klecko01@ssw.alcoa.com
Mackie Shiflett.....	Alcoa-Fujikura Ltd.	864-433-5939	shifle01@ssw.alcoa.com
Bob Atkinson.....	AMP	717-592-4274	rdatkins@amp.com
Charles Brill.....	AMP	717-592-6198	cebrill@amp.com
Daniel Brown.....	AMP	717-986-7812	dan.brown@amp.com
Shelly Buchter.....	AMP	717-986-5034	shelly.buchter@amp.com
Jim Kevern.....	AMP	717-986-5701	james.kevern@amp.com
Alan Plotts.....	AMP	717-986-7985	alan.plotts@amp.com
Jack Andrews	Andrews Associates.....	770-939-1482	
Ed Cady	Berg.....	503-359-4556	EdCady@aol.com
John Ellis.....	Berg.....	717-938-7512	Ellis825@aol.com
Michael Karg	Cable Design Technologies.....	508-791-3161	mikekarg@montrose-cdt.com
Kurt Witte.....	Ciprico.....	612-551-4069	
Carol McGill	Corning	607-974-4939	mcgill_cl@corning.com
Jeff Young.....	Cray Research Inc.....	612-683-5536	jsy@cray.com
David Hyer.....	Digital Equipment Corp.	508-493-6139	hyer@exchange.eng.pko.dec.com
Raju Bopardikur.....	Discreet Logic	514-272-0525	raju_bopardikur@discreet.com
Lawrence Foltzer.....	DSC Communications.....	707-792-7228	larry_foltzer@optilink.dsccs.com
John Gibbon.....	Essential Communications	505-344-0080	kgibbon@esscom.com
Michael McGowen...	Essential Communications	505-344-0080	mikemc@esscom.com
J.J. Dumont	F.C.I. / F.C.F.	011-33-1-39492071	jdumont@iway.fr
Joe Salamone	Framatome Connectors.....	603-746-3512	jsconnect@aol.com
Chris Simoneaux.....	Fujikura	770-956-7200	chris@fujikura.com
Hari Naidu	Fujikura Technology Am.	408-988-7420	hari@fujikura.com
Donald Woelz.....	Genroco, Inc.....	414-644-2505	don@genroco.com
Randy Hardy.....	Harris	407-984-5654	rhardy@harris.com
Francois Gaullier.....	Hewlett Packard.....	+33 4-7614-5181	Francois_Gaullier@hp.com
Greg Huff.....	Hewlett Packard.....	972-497-4530	huff@convex.hp.com
Steve Joiner.....	Hewlett Packard.....	408-435-6421	STEVE_JOINER@HP-SanJose-om1.om.hp.com

Meeting minutes of X3T11 HIPPI SWG / HNF-TC - February 4, 1997

John Bowerman.....Honeywell.....	972-470-4553	jbowerma@micro.honeywell.com
Henry Brandt.....IBM Poughkeepsie.....	914-433-7684	hrap@vnet.ibm.com
Ron SoderstromIBM.....	507-253-6290	rons@vnet.ibm.com
James Hoffman.....Los Alamos National Lab	505-665-8557	jamesh@lanl.gov
Don Tolmie.....Los Alamos National Lab	505-667-5502	det@lanl.gov
Wallace Carlisle.....Lucent Technologies.....	770-798-2668	awcarlisle@lucent.com
Vince MelendyMethode Electronics.....	617-273-2650	72540.1774@compuserve.com
Rich Parks.....Motorola, Inc.	602-732-5152	rcw670@email.sps.mot.com
Glenn RaskinMotorola.....	602-732-2880	RXFA30@email.sps.mot.com
Daniel SchwartzMotorola.....	602-413-5320	a186aa@email.sps.mot.com
Fred Templin.....NASA Ames	415-604-6514	templin@nas.nasa.gov
Yasuo Sasaki.....NTT International.....	03-5956-9025	ysasaki@http.co.jp
Joe Parker.....Optivision	415-855-1775	parker@optivision.com
Sherman ZhuOptobahn Corp.....	310-782-9500	xzhu@optobahn.com
Ellen LaphamPage Automated Telecom Sys.....	408-773-9481	ev?lapham@aol.com
Pat WienierPage Automated Systems	408-773-9481	
Craig DavidsonRaytheon E-Systems.....	214-205-4166	davidson@esy.com
Roger Ronald.....Raytheon E-Systems.....	972-205-8043	rronald@esy.com
Hank Dunnenberger Siecor	704-327-5267	h_dunnenberger@siecor.com
Todd HudsonSiecor	704-327-5815	todd_hudson@siecor.com
Klaus SchulzSiemens	49-30386-26333	
Schelto van Doorn....Siemens Fiber Optic	408-725-3436	schelto@siemens-fo.com
Greg ChessonSilicon Graphics.....	415-962-3496	greg@sgi.com
Jeffrey ChungSilicon Graphics.....	415-933-3823	jdchung@sgi.com
Hansel CollinsSilicon Graphics.....	415-933-2921	hac@engr.sgi.com
Craig DunwoodySilicon Graphics.....	415-933-3635	dunwoody@sgi.com
Chris SatterleeSilicon Graphics.....	415-933-2606	csatt@sgi.com
Wally St.John.....Silicon Graphics.....	415-933-7613	wbs@eng.sgi.com
Ali GhiasiSun Microsystems	415-786-3310	ghiasi@eng.sun.com
Albert Kelley.....Tensolite	904-829-5600	kelley@tensolite.com
Don KnaselU.S. Connect	704-323-8883	dknasel_conec@msn.com
Toshiaki Satake.....U.S. Connect	704-323-8883	Toshiaki.satake@hickory.net
Mark StrattonVixel.....	303-464-2274	
Stan SwirhunVixel.....	303-464-2276	sswirhun@vixel.com
Ken WirglerWard/Davis Comm	310-297-5990	kenwdc@aol.com
Craig TheorinW.L. Gore and Associates.....	302-368-2575	ctheorin@wlgore.com